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A Cohort Study on the Impact of Narrative Medicine Writing on the Empathy Ability and Job Burnout of Oncology Standardized Training Trainees

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Abstract: *Objective:* To explore the impact of narrative medicine writing intervention on the empathy ability and job burnout of residents undergoing standardized training in oncology (referred to as "standardized training"), and to provide empirical evidence for optimizing the standardized training system in oncology. *Methods:* A total of 70 trainees who received standardized training in the oncology department of our hospital from January 2024 to June 2025 were selected as the study subjects. They were divided into an observation group and a control group with 35 cases each according to the random number table method. The control group received routine standardized training in oncology, while the observation group received additional narrative medicine writing training on the basis of routine standardized training. Baseline data of the two groups were statistically analyzed, and the empathy ability and job burnout levels of the trainees in both groups were evaluated before the intervention (January 2024) and after the intervention (June 2025), respectively. *Results:* Before the intervention, there were no statistically significant differences in demographic characteristics such as gender, age, educational background, and rotation duration between the two groups of trainees (all $P > 0.05$). After the intervention, the total score and scores in each dimension of the JSE-HP in the observation group were significantly higher than those in the control group, and the scores in the observation group after the intervention were significantly higher than those before the intervention (all $P < 0.001$). After the intervention, the scores in the dimensions of emotional exhaustion and cynicism in the observation group were significantly lower than those in the control group, while the score in the dimension of reduced professional efficacy was significantly higher than that in the control group. Moreover, in the observation group, the scores in emotional exhaustion and cynicism decreased significantly after the intervention, and the score in reduced professional efficacy increased significantly (all $P < 0.001$). After the intervention, the total score of the JSE-HP in the observation group showed a significant negative correlation with the emotional exhaustion dimension of the MBI-GS ($r = -0.664$, $P < 0.001$), a significant negative correlation with the cynicism dimension ($r = -0.571$, $P < 0.001$), and a significant positive correlation with the reduced professional efficacy dimension ($r = 0.425$, $P < 0.001$). *Conclusion:* Narrative medicine writing can effectively enhance the empathy ability of trainees in standardized training programs for oncology and reduce their level of job burnout, making it worthy of promotion and application in the standardized training system for oncology.

Keywords: Narrative medicine; Oncology; Standardized training; Empathy ability; Job burnout; Cohort study

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1. Introduction

Oncology inpatients (patients in the Medical Oncology Department) often exhibit complex psychological stress responses due to their critical conditions, long treatment cycles, and high prognostic uncertainty, which places higher demands on the empathetic abilities and communication skills of healthcare professionals. Standardized residency training is a crucial stage in the cultivation of medical talents; however, residents training in oncology departments face challenges such as high-intensity clinical work, pressure from doctor-patient communication, and issues with professional identity, making them prone to a decline in empathetic abilities and a high incidence of job burnout. Research indicates that during clinical training, medical students may experience a decrease in empathy levels and a significant increase in the incidence of job burnout due to mechanisms such as "empathy fatigue" and "defensive indifference," which significantly impact the quality of medical care and career development [1]. Narrative medicine, as a teaching model that integrates medical humanities with clinical practice, helps healthcare professionals understand patients' perspectives and rebuild emotional connections with them by writing patients' stories and reflecting on medical situations. It has been proven in fields such as pediatrics and spinal surgery to enhance the empathetic abilities of residents in training and alleviate job burnout [2]. However, there is limited specialized research on oncology departments, and a lack of long-term cohort data for support. This study targeted 70 residents in training in oncology departments and conducted an 18-month narrative medicine writing intervention over the course of one year to explore its long-term effects on empathetic abilities and job burnout, providing evidence-based references for improving the humanistic teaching system in oncology departments.

2. Materials and methods

2.1. General information

A total of 70 trainees who commenced standardized training in the oncology department of the hospital from January 2024 to June 2025 were selected as the study subjects. They were randomly divided into an observation group and a control group, with 35 cases in each group, using a random number table method.

Inclusion criteria: (1) Meet the requirements of the *Content and Standards for Standardized Training of Resident Physicians (Internal Medicine Orientation)* and enter the oncology department for standardized training for the first time; (2) Have not received any training related to narrative medicine; (3) Volunteer to participate in this study and sign an informed consent form; (4) Complete the 18-month training and the two assessments before and after the training in full. Exclusion criteria: (1) Interrupt the training during the standardized training period due to reasons such as resignation; (2) Have a history of mental or psychological disorders; (3) Fill out the questionnaires incompletely (with an effective response rate < 90%).

2.2. Methods

Both groups of trainees received routine standardized training in the oncology department, including theoretical lectures (4 times per month), clinical rounds (once per day), teaching rounds (once every two weeks), case

discussions (once every two weeks), and skill operation training, which met the requirements of the national standardized training syllabus.

The observation group received additional narrative medicine writing training on the basis of routine standardized training for a period of 18 months. The specific implementation is as follows:

(1) Training content: Focus on the narrative elements in the diagnosis and treatment process of cancer patients, including their disease experiences, psychological states, family support, challenges in doctor-patient communication, and the learners' own professional reflections. The "parallel medical record" writing format will be adopted (i.e., in addition to traditional medical records, patient stories and personal insights are also recorded).

(2) Implementation frequency: Writing tasks will be assigned twice a month (with each task requiring no less than 800 words), covering patients at different disease stages (initial diagnosis, chemotherapy, palliative care, etc.). A narrative medicine case-sharing session (2 hours per session) will be organized quarterly, with guidance and feedback provided by the supervising teachers.

(3) Quality control: Writing portfolios will be established, and supervising teachers will provide feedback on each assignment, focusing on guiding learners to pay attention to patients' emotional needs and their own professional growth, while avoiding formulaic writing.

2.3. Observation indicators

2.3.1. Empathy assessment

The Chinese version of the Jefferson Scale of Empathy (JSE-HP) will be used, which is applicable to healthcare professionals. The scale consists of 20 items covering three dimensions: perspective-taking, compassionate care, and standing in the patient's shoes. A 7-point Likert scale (1 = completely disagree, 7 = completely agree) will be used, with 10 items scored in reverse. The total score ranges from 20 to 140, with higher scores indicating stronger empathy.

2.3.2. Assessment of job burnout

The general version of the Maslach Burnout Inventory (MBI-GS) was employed, comprising 15 items divided into three dimensions: emotional exhaustion, cynicism, and reduced professional efficacy. A scoring method ranging from 0 to 6 (0 = never, 6 = daily) was used, with the reduced professional efficacy dimension scored in reverse. Higher scores on each dimension indicate a more severe degree of job burnout.

2.4. Data collection

Questionnaires were administered before the intervention (January 2024) and after the intervention (June 2025). Trained research assistants distributed the questionnaires uniformly, which were filled out anonymously and collected on-site. A total of 70 questionnaires were distributed, and all 70 were effectively recovered, resulting in a 100% effective recovery rate.

2.5. Statistical methods

Data analysis was conducted using SPSS 26.0 statistical software. Measurement data were expressed as mean ± standard deviation (SD). Comparisons within groups before and after the intervention were made using paired *t*-tests, while comparisons between groups were made using independent sample *t*-tests. Count data were expressed as the number of cases [*n* (%)], and comparisons between groups were made using χ^2 tests. The correlation between empathy and job burnout was analyzed using Pearson correlation analysis. A *P*-value of

less than 0.05 was considered statistically significant.

3. Results

3.1. Comparison of baseline data between two groups of trainees

Before the intervention, there were no statistically significant differences in demographic characteristics such as gender, age, educational background, and rotation duration between the two groups of trainees (all $P > 0.05$) (**Table 1**).

Table 1. Comparison of baseline data between two groups of oncology standardized training trainees

Characteristic	Gender, male/female [*n*]	Age (years, mean ± SD)	Education [*n* (%)]		Rotation duration (months, mean ± SD)	Prior communication training [*n* (%)]
			Bachelor's degree	Master's degree		
Observation group ($n = 35$)	16/19	25.34 ± 1.83	8	27	3.22 ± 1.11	9 (25.7)
Control group ($n = 35$)	14/21	24.95 ± 1.62	10	25	3.01 ± 1.02	7 (20.0)
χ^2/t	0.233	0.944	0.299		0.824	0.324
P	0.629	0.349	0.584		0.413	0.569

3.2. Comparison of empathy ability scores before and after intervention between two groups of trainees

After the intervention, the total score and each dimension score of the JSE-HP in the observation group were significantly higher than those in the control group. Moreover, the scores in the observation group after the intervention were significantly higher than those before the intervention (all $P < 0.001$) (**Table 2**).

Table 2. Comparison of JSE-HP scores before and after intervention between two groups of trainees

Group	Perspective-taking		Empathic concern		Fantasy		Total score	
	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention
Observation ($n = 35$)	38.21 ± 4.12	45.61 ± 3.83	32.55 ± 3.54	39.85 ± 3.27	29.75 ± 3.26	35.91 ± 2.91	100.45 ± 8.66	126.86 ± 7.37
Control ($n = 35$)	37.81 ± 3.93	38.54 ± 4.05	32.15 ± 3.32	33.01 ± 3.42	29.33 ± 3.02	30.23 ± 3.14	99.27 ± 8.31	108.53 ± 6.94
t	0.416	7.504	0.488	8.552	0.559	7.849	0.582	10.712
P	0.679	< 0.001	0.627	< 0.001	0.578	< 0.001	0.563	< 0.001

3.3. Comparison of job burnout scores before and after intervention between two groups of trainees

After the intervention, the scores of emotional exhaustion and cynicism dimensions in the observation group were significantly lower than those in the control group, while the score of the reduced professional efficacy dimension was significantly higher than that in the control group. Furthermore, in the observation group, the scores of emotional exhaustion and cynicism significantly decreased, and the score of reduced professional efficacy significantly increased after the intervention (all $P < 0.001$) (**Table 3**).

Table 3. Comparison of MBI-GS scores before and after intervention between two groups of trainees

	Emotional exhaustion		Cynicism		Reduced professional efficacy	
Group	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention
Observation	22.33 ± 4.22	14.22 ± 3.13	10.65 ± 2.32	5.31 ± 1.62	13.83 ± 2.74	18.61 ± 2.53
Control	21.83 ± 4.04	21.52 ± 3.81	10.25 ± 2.15	9.73 ± 2.14	14.12 ± 2.62	14.36 ± 2.84
t	0.506	8.759	0.748	9.743	0.453	6.611
P	0.614	< 0.001	0.457	< 0.001	0.652	< 0.001

3.4. Correlation analysis between empathy ability and job burnout in the observation group

After the intervention, the total score of JSE-HP in the observation group showed a significant negative correlation with the emotional exhaustion dimension of MBI-GS (r = -0.664, $P < 0.001$), a significant negative correlation with the cynicism dimension (r = -0.571, $P < 0.001$), and a significant positive correlation with the reduced professional efficacy dimension (r = 0.425, $P < 0.001$).

4. Discussion

Under the current healthcare system, oncology departments, characterized by long treatment cycles, high prognostic uncertainty, and complex emotional needs of patients, have become a "disaster zone" for the occupational stress and emotional burden of residents in standardized training programs [3]. Meanwhile, external factors such as the pressure of medical assessments and tense doctor-patient relationships have further exacerbated job burnout [4]. This dilemma of "empathy decline–job burnout" not only affects the quality of standardized training but also has a cascading negative impact on medical services. Therefore, there is an urgent need to explore targeted intervention measures [5].

The results of this study indicate that after 18 months of narrative medicine writing training, the total score and scores across all dimensions of JSE-HP in the observation group were significantly higher than those in the control group, with significant differences observed in pre- and post-training comparisons within the observation group. This suggests that narrative medicine writing can effectively enhance the empathy ability of residents in standardized training programs in oncology departments, consistent with the conclusions of previous studies. Oncology inpatients face life-threatening conditions and treatment-related suffering, with their narratives encompassing emotional needs such as fear, despair, and anticipation that are often overlooked in clinical practice under the traditional biomedical model. Narrative medicine writing requires trainees to delve into patients' stories as "listeners," documenting the life experiences and psychological appeals behind their illnesses. This "immersive" experience can activate trainees' mirror neuron systems, enhancing their capacity for emotional empathy [6]. Oncology patients have a high incidence of psychological distress, yet traditional residency training primarily focuses on diagnostic and therapeutic techniques, lacking training in emotional care. By guiding trainees to record patients' emotional changes and needs for psychological support, narrative medicine writing encourages them to integrate "humanistic care" into daily clinical practice, gradually fostering a "patient-centered" professional philosophy—a process that cultivates and strengthens emotional care abilities [7].

Occupational burnout represents a major professional challenge for residency trainees, particularly in oncology, where high workloads, frequent patient-provider conflicts, and clinically "hopeless" scenarios

can easily lead to emotional exhaustion and crises of professional identity [8]. This study found that after intervention, the observation group demonstrated significant reductions in scores for emotional exhaustion and cynicism, along with a significant increase in scores for reduced professional efficacy, indicating that narrative medicine writing can effectively alleviate occupational burnout [9]. The mechanisms may include the following: (1) Emotional catharsis and stress relief: Writing itself serves as a method of psychological counseling. By recording the confusion, setbacks, and insights encountered in clinical work, trainees can release accumulated negative emotions and reduce the occurrence of emotional exhaustion. (2) Reconstruction of professional significance: Through writing about patients' struggles and the emotional connections between doctors and patients, trainees can re-recognize the value of medicine, strengthen their sense of professional mission, and thereby reduce cynical attitudes. (3) Skill enhancement and self-identity: Improved empathy skills can enhance the effectiveness of doctor-patient communication and reduce conflicts. Positive feedback from patients, in turn, can enhance trainees' sense of professional accomplishment and alleviate feelings of low professional efficacy.

Correlation analysis indicates a significant correlation between empathy and job burnout, suggesting that enhanced empathy may be an important mediating variable through which narrative medicine writing alleviates job burnout. This finding aligns with the theoretical model of "empathy–professional identity–burnout," which posits that increased empathy promotes professional identity, thereby reducing the risk of job burnout [10].

5. Conclusion

In summary, narrative medicine writing, as an effective humanistic teaching intervention, can significantly enhance the empathy skills of oncology residents and reduce their levels of job burnout. Moreover, there is a significant correlation between the improvement in empathy skills and the alleviation of job burnout.

Disclosure statement

The authors declare no conflict of interest.

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